REMARKS/ARGUMENTS

Examiner Pham is thanked for the thorough examination of the subject Patent Application. The Claims have been carefully reviewed and amended, and are considered to be in condition for allowance.

Reconsideration of the rejection under 35 USC §102(e) of Claims 15-16, and 18 as being anticipated by U.S. Patent Publication Number 2003/0064684 (Zinn) is requested in light of the following arguments. Zinn does describe a decoder apparatus that is part of a receiver having a receiver frequency demodulator or receiver mixer to compensate or down convert for the frequency modulation of the transmitter. The output of the frequency demodulator is coupled with the integrator. Zinn does not discuss:

> an integrator in communication with the down-converter to receive the extracted pulse width modulated signal to remove a timing signal from said extracted pulse width modulated signal to restore an audio signal. (Claim 15, Lines 8-11)

The integrator 222 as discussed in paragraph [0030] of Zinn "receives the modulated signal 132. The integrator generates an average DC voltage 224 proportional to the duty cycle of the modulated signal 132, where the duty cycle is proportional to the select voltage." While a low pass filter is required to

generate the DC voltage, there is no teaching to removing a timing signal from a pulse width modulated signal to restore an audio signal.

Reconsideration of the rejection under 35 USC §103(a) of Claims 1-4, 6, 8, 10-12, 20-23, and 25 as being unpatentable over in by U.S. Patent Publication Number 2003/0064684 (Zinn) in view of U. S. Patent 4,059,807 (Hamada) is requested in light of the following arguments. As described above, Zinn does describe a decoder apparatus that is part of a receiver having a receiver frequency demodulator or receiver mixer to compensate or down convert for the frequency modulation of the transmitter. The output of the frequency demodulator is coupled with the integrator. Hamada does describe a pulse width modulated amplifier. However, with regards to Claims 1-4, 6, 8, 20-23, and 25 neither Zinn, nor Hamada, nor the combination of Zinn and Hamada teach to:

> a pulse width amplifier to receive an audio signal and modulate a pulse width of a digital timing signal with said audio signal, such that the pulse width is proportional to an amplitude of said audio signal to provide a pulse width modulated signal; (Claim 1, Lines 3-7)

> an integrator in communication with the down-converter to receive the extracted pulse width modulated signal to remove a timing signal from said extracted pulse width modulated signal to restore the audio signal. (Claim 1, Lines 17-20)

A method for wireless transmission of an audio signal comprising the steps of:

acquiring the audio signal;

comparing said audio signal with a timing signal;

from said comparing, forming a pulse width modulated signal; and (Claim 20, Lines 1-5)

integrating the restored pulse width modulated signal to remove a timing signal from said restored pulse width modulated signal to extract said audio signal. (Claim 20, Lines 12-14)

The integrator 222 as discussed in paragraph [0030] of Zinn "receives the modulated signal 132. The integrator generates an average DC voltage 224 proportional to the duty cycle of the modulated signal 132, where the duty cycle is proportional to the select voltage." While a low pass filter is required to generate the DC voltage, there is no teaching to removing a timing signal from a pulse width modulated signal to restore an audio signal. As noted by the Examiner, Zinn does not teach to or imply a pulse width amplifier. Hamada teaches only to the pulse width amplifier and does not teach the integrator for removing the timing signal to restore the audio signal.

With regards to Claims 10-12:

As noted by the Examiner, Zinn does not describe:

> a pulse width amplifier to receive an audio signal and modulate a pulse width of a digital timing signal with said audio signal, such that the pulse width is proportional to an amplitude of said audio signal to provide a pulse width modulated signal; (Claim 10, Lines 2-6)

Hamada does not describe:

> an up-converter in communication with the pulse width amplifier to receive the pulse width modulated signal and convert said pulse width modulated signal to a modulated carrier signal; (Claim 10, Lines 7-9) and
>
> a transmitter in communication with the modulated carrier signal to transfer the modulated carrier signal wirelessly. (Claim 10, Lines 10-11)

There is no teaching in Zinn to suggest the pulse width amplifier and in Hamada to suggest the up-converter and transmitter. Therefore, the applicant does not believe that the combination is obvious.

The invention as claimed in amended Claims 1-4, 6, 8, 10-12, 20-23, and 25 is believed to be novel and patentable over Zinn, Hamada, or Zinn in combination with Hamada because there is not sufficient basis for concluding

that the combination of claimed elements would have been obvious to one skilled in the art. That is to say, there must be something in the prior art or line of reasoning to suggest that the combination of these various references is desirable. The applicant believes that there is no such basis for the combination. The applicant therefore requests Examiner Pham reconsider the rejection in view of these arguments.

Reconsideration of the rejection under 35 USC §103(a) of Claims 17, and 19 as being unpatentable over in by U.S. Patent Publication Number 2003/0064684 (Zinn) in view of U. S. Patent 6,690,949 (Shamlou et al.) is requested in light of the following arguments. As described above, Zinn does describe a decoder apparatus that is part of a receiver having a receiver frequency demodulator or receiver mixer to compensate or down convert for the frequency modulation of the transmitter. The output of the frequency demodulator is coupled with the integrator. Shamlou et al. does discuss a demodulator that employs Quadrature Phase Shift Key, Differential Quadrature Phase Shift, Amplitude Shift Keying and Frequency Shift Keying demodulation schemes. Neither Zinn, nor Shamlou et al., nor Zinn in combination with Shamlou et al. discusses:

> an integrator in communication with the down-converter to receive the extracted pulse width modulated signal to remove a timing signal from said extracted pulse width modulated signal to restore an audio signal. (Claim 15, Lines 8-11)

The integrator 222 as discussed in paragraph [0030] of Zinn "receives the modulated signal 132. The integrator generates an average DC voltage 224 proportional to the duty cycle of the modulated signal 132, where the duty cycle is proportional to the select voltage." While a low pass filter is required to generate the DC voltage, there is no teaching to removing a timing signal from a pulse width modulated signal to restore an audio signal. There is no suggestion in Shamlou et al. for removal of a timing signal from a pulse width modulated signal to restore an audio signal.

The invention as claimed in amended Claims 17 and 19 is believed to be novel and patentable over Zinn, Shamlou et al., or Zinn in combination with Shamlou et al., because there is not sufficient basis for concluding that the combination of claimed elements would have been obvious to one skilled in the art. That is to say, there must be something in the prior art or line of reasoning to suggest that the combination of these various references is desirable. The applicant believes that there is no such basis for the combination. The applicant therefore requests Examiner Pham reconsider the rejection in view of these arguments.

Reconsideration of the rejection under 35 USC §103(a) of Claims 2 and 21 as being unpatentable over in by U.S. Patent Publication Number 2003/0064684 (Zinn) in view of U. S. Patent 4,059,807 (Hamada) and further in view of U.S. Patent Publication Number 2003/0017840 (Katagishi, et al.) is requested in light of the following arguments. As described above, Zinn does

describe a decoder apparatus that is part of a receiver having a receiver frequency demodulator or receiver mixer to compensate or down convert for the frequency modulation of the transmitter. The output of the frequency demodulator is coupled with the integrator. Hamada does describe a pulse width modulated amplifier. Katagishi, et al. does describe the use of a speaker in a cellular telephone However, neither Zinn, nor Hamada, nor Katagishi, et al., nor the combination of Zinn, Hamada, and Katagishi, et al. teach to:

> a pulse width amplifier to receive an audio signal and modulate a pulse width of a digital timing signal with said audio signal, such that the pulse width is proportional to an amplitude of said audio signal to provide a pulse width modulated signal; (Claim 1, Lines 3-7)
>
> an integrator in communication with the down-converter to receive the extracted pulse width modulated signal to remove a timing signal from said extracted pulse width modulated signal to restore the audio signal. (Claim 1, Lines 17-20)

A method for wireless transmission of an audio signal comprising the steps of:

> acquiring the audio signal;
>
> comparing said audio signal with a timing signal;

from said comparing, forming a pulse width modulated signal; and

(Claim 20, Lines 1-5)

integrating the restored pulse width modulated signal to remove a timing signal from said restored pulse width modulated signal to extract said audio signal. (Claim 20, Lines 12-14)

The integrator 222 as discussed in paragraph [0030] of Zinn "receives the modulated signal 132. The integrator generates an average DC voltage 224 proportional to the duty cycle of the modulated signal 132, where the duty cycle is proportional to the select voltage." While a low pass filter is required to generate the DC voltage, there is no teaching to removing a timing signal from a pulse width modulated signal to restore an audio signal. As noted by the Examiner, Zinn does not teach to or imply a pulse width amplifier. Hamada teaches only to the pulse width amplifier and does not teach the integrator for removing the timing signal to restore the audio signal. Katagishi, et al. teaches to a receiver that includes input amplifiers, filters, a down-converter, an amplifier, a quadrature demodulator (QDEM), and a base band demodulator 160. Katagishi, et al. does not teach to the integrator for removing the timing signal to restore the audio signal.

The invention as claimed in amended Claims 2 and 21 is believed to be novel and patentable over Zinn, Hamada, Katagishi, et al., or Zinn in combination with Hamada and Katagishi, et al. because there is not sufficient basis for

concluding that the combination of claimed elements would have been obvious to one skilled in the art. That is to say, there must be something in the prior art or line of reasoning to suggest that the combination of these various references is desirable. The applicant believes that there is no such basis for the combination. The applicant therefore requests Examiner Pham reconsider the rejection in view of these arguments.

Reconsideration of the rejection under 35 USC §103(a) of Claims 5, 7, 9, 13-14, 24, 26, and 27 as being unpatentable over in by U.S. Patent Publication Number 2003/0064684 (Zinn) in view of U. S. Patent 4,059,807 (Hamada) and further in view of U. S. Patent 6,690,949 (Shamlou et al.) is requested in light of the following arguments. As described above, Zinn does describe a decoder apparatus that is part of a receiver having a receiver frequency demodulator or receiver mixer to compensate or down convert for the frequency modulation of the transmitter. The output of the frequency demodulator is coupled with the integrator. Hamada does describe a pulse width modulated amplifier. Shamlou et al. does discuss a demodulator that employs Quadrature Phase Shift Key, Differential Quadrature Phase Shift, Amplitude Shift Keying and Frequency Shift Keying demodulation schemes. However, with regards to Claims 5, 7, 9, 24, 26, and 27 neither Zinn, nor Hamada, nor Shamlou et al., nor the combination of Zinn, Hamada, and Shamlou et al. teach to:

> a pulse width amplifier to receive an audio signal and modulate a pulse width of a digital timing signal with said audio signal, such that

the pulse width is proportional to an amplitude of said audio signal to provide a pulse width modulated signal; (Claim 1, Lines 3-7)

an integrator in communication with the down-converter to receive the extracted pulse width modulated signal to remove a timing signal from said extracted pulse width modulated signal to restore the audio signal. (Claim 1, Lines 17-20)

A method for wireless transmission of an audio signal comprising the steps of:

acquiring the audio signal;

comparing said audio signal with a timing signal;

from said comparing, forming a pulse width modulated signal; and (Claim 20, Lines 1-5)

integrating the restored pulse width modulated signal to remove a timing signal from said restored pulse width modulated signal to extract said audio signal. (Claim 20, Lines 12-14)

The integrator 222 as discussed in paragraph [0030] of Zinn "receives the modulated signal 132. The integrator generates an average DC voltage 224 proportional to the duty cycle of the modulated signal 132, where the duty cycle

is proportional to the select voltage." While a low pass filter is required to generate the DC voltage, there is no teaching to removing a timing signal from a pulse width modulated signal to restore an audio signal. As noted by the Examiner, Zinn does not teach to or imply a pulse width amplifier. Hamada teaches only to the pulse width amplifier and does not teach the integrator for removing the timing signal to restore the audio signal. There is no suggestion in Shamlou et al. for removal of a timing signal from a pulse width modulated signal to restore an audio signal.

With regards to Claims 13-14:

Zinn (As noted by the Examiner) and Shamlou et al. do not describe:

a pulse width amplifier to receive an audio signal and modulate a pulse width of a digital timing signal with said audio signal, such that the pulse width is proportional to an amplitude of said audio signal to provide a pulse width modulated signal; (Claim 10, Lines 2-6)

Hamada does not describe:

an up-converter in communication with the pulse width amplifier to receive the pulse width modulated signal and convert said pulse width modulated signal to a modulated carrier signal; (Claim 10, Lines 7-9) and

a transmitter in communication with the modulated carrier signal to transfer the modulated carrier signal wirelessly. (Claim 10, Lines 10-11)

There is no teaching in Zinn and Shamlou et al. to suggest the pulse width amplifier and in Hamada to suggest the up-converter and transmitter. Therefore, the applicant does not believe that the combination is obvious.

The invention as claimed in amended Claims 5, 7, 9, 13-14, 24, 26, and 27 is believed to be novel and patentable over Zinn, Hamada, Shamlou et al., or Zinn in combination with Hamada and Shamlou et al. because there is not sufficient basis for concluding that the combination of claimed elements would have been obvious to one skilled in the art. That is to say, there must be something in the prior art or line of reasoning to suggest that the combination of these various references is desirable. The applicant believes that there is no such basis for the combination. The applicant therefore requests Examiner Pham reconsider the rejection in view of these arguments.

The related art references made of record and not relied upon have been reviewed and it is agreed that they do not suggest the present detailed claimed invention.

Applicant respectfully requests that a timely Notice of Allowance for all claims be issued in this case.

It is requested that should Examiner Pham not find that the Claims are now allowable, that the undersigned be called at (845) 452-5863 to overcome any problems preventing allowance.

Respectfully Submitted,
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